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(71) Applicant (for all designated States except US): **SO-GANG UNIVERSITY CORPORATION** [KR/KR]; 1 Sinsu-dong, Mapo-gu, Seoul 121-742 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RHEE, Hee-Woo** [KR/KR]; 61-502 Banpo-Apt., Banpo bon-dong, Seocho-gu, Seoul 137-040 (KR). **YOON, Do Young**

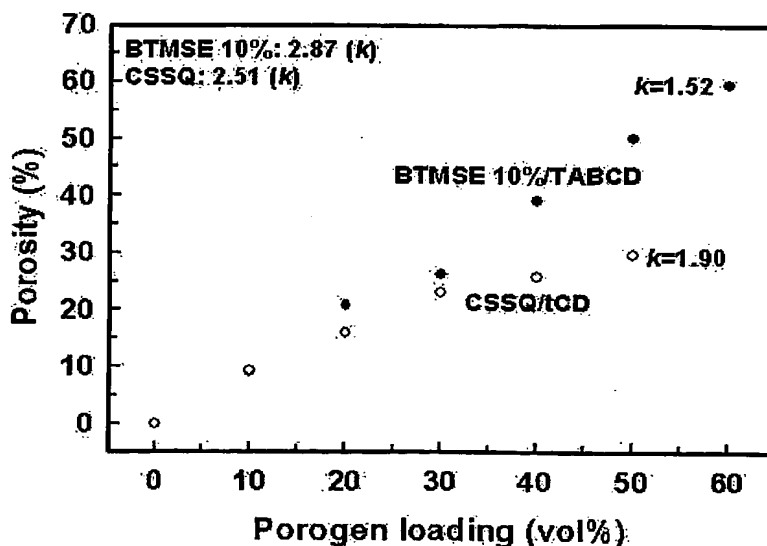
[KR/KR]; 936-208 Faculty house, Bongcheon 7-dong, Gwanak-gu, Seoul 151-057 (KR). **CHAR, Kook Heon** [KR/KR]; A-304, Banpo Hyundai Villa, 104-6 Banpo 4-dong, Seocho-gu, Seoul 137-806 (KR). **LEE, Jin-Kyu** [KR/KR]; 143-902 Gwanak dream town, Bongcheon 5-dong, Gwanak-gu, Seoul 151-770 (KR). **MOON, Bongjin** [KR/KR]; 704-1408 Sinwoo Apt., Muwonmaeul, Haengsin-dong, Deokyang-gu, Goyang-si, Kyunggi-do 412-220 (KR). **MIN, Sung-Kyu** [KR/KR]; 303 Geumtop Villa, 549-1 Gwangjang-dong, Gwangjin-gu, Seoul 143-210 (KR). **PARK, Se Jung** [KR/KR]; 1618-9 Bongcheon 7-dong, Gwanak-gu, Seoul 151-057 (KR). **SHIN, Jae-Jin** [KR/KR]; 722 Yuksa Apt., Gongneung-dong, Nowon-gu, Seoul 139-772 (KR).

(74) Agent: **PAIK, Nam-Hoon**; 14th Fl., KTB Network Bldg., 826-14, Yeoksam-dong, Kangnam-ku, Seoul 135-769 (KR).

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(54) Title: **ULTRA-LOW DIELECTRICS FOR COPPER INTER CONNECT**



(57) Abstract: The present invention relates to an ultra-low dielectric film for a copper interconnect, in particular, to an porous film prepared in such a manner that coating with an organic solution containing a polyalkyl silsesquioxane precursor or its copolymer as a matrix and acetylcyclodextrin nanoparticles as a template and then performing a sol-gel reaction and heat treatment at higher temperature. The present films may contain the template of up to 60 vol%, due to the use of acetylcyclodextrin, and have homogeneously distributed pores with the size of no more than 5 nm in the matrix. In addition, the present films exhibit a relatively low dielectric constant of about 1.5, and excellent interconnectivity between pores, so that they are considered a promising ultra-low dielectric film for a copper interconnect.



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